UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHEISAN J. YUE, MOHAMMED A. FATHIMULLA, ERIC E. VOGT, and WILLAIM L. LARSON

Appeal No. 2006-1458
Application No. 10/040,395

ON BRIEF

Before RUGGIERO, BLANKENSHIP, and SAADAT, Administrative Patent Judges.

RUGGIERO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal from the final rejection of claims 32-40.

The claimed invention relates to a method of making a varactor in which a plurality of alternating p- wells and N+ regions are formed in a silicon layer of an SOI structure. Each of a plurality of gate oxides is formed above a corresponding one of the P- wells, and each of a plurality of silicon gates is formed above a corresponding one of the gate oxides. The silicon

gates are electrically coupled together as are the N+ regions enabling the voltage across the silicon gates and the N+ regions to control the capacitance of the varactor.

Claim 32 is illustrative of the invention and reads as follows:

32. A method of making a varactor comprising:

forming a plurality of alternating P- wells and N+ regions in a silicon layer of an SOI structure, wherein the P- wells form N+/P- junctions with the N+ regions, and wherein each of the P- wells and the N+ regions extends completely through the silicon layer to an insulation layer of the SOI structure;

forming a plurality of gate oxides, wherein each of the gate oxides is formed above a corresponding one of the P- wells;

forming a plurality of silicon gates, wherein each of the silicon gates is formed above a corresponding one of the gate oxides;

electrically coupling each of the silicon gates together; and,

electrically coupling each of the N+ regions together.

The Examiner's Answer cites the following prior art:

Chiang et al. (Chiang)	5,038,184	Aug. 06, 1991
Tsang[1]	5,563,438	Oct. 08, 1996
Litwin et al. (Litwin)	6,100,770	Aug. 08, 2000

[1] The Tsang reference is cited by the Examiner as providing evidence but is not part of the stated ground of rejection.

Claims 32-40, all of the appealed claims, stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Chiang in view of Litwin.

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the Briefs and Answer (revised) for their respective details.

OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the Examiner and the evidence of obviousness relied upon by the Examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, Appellants' arguments set forth in the Briefs along with the Examiner's rationale in support of the rejection and arguments in rebuttal set forth in the Examiner's Answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in claims 32-40. Accordingly, we reverse.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the Examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re

Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

With respect to the Examiner's 35 U.S.C. § 103(a) rejection of appealed independent claim 32 based on the combination of Chiang and Litwin, Appellants asserts that the Examiner has failed to set forth a prima facie case of obviousness since proper motivation for the proposed combination of references has not been established. After reviewing the arguments of record from Appellants and the Examiner, we are in general agreement with Appellants' position as stated in the Briefs.

The Examiner proposes (Answer, page 5) to modify the varactor device of Chiang by making the lightly doped well regions 47 of p-type material as taught by Litwin. According to the Examiner (id.), the ordinarily skilled artisan would have made such a modification in order to form "a depletion-type channel region with good channel modulation sensitivity ...." We agree with Appellants (Brief, page 11; Reply Brief, page 3), however, that neither Chiang nor Litwin has any disclosure that the described devices provide the result asserted by the Examiner nor why such a result would be desirable. The mere fact that the prior art may be modified in the manner suggested by the Examiner

does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F. 2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992).

We recognize that the Examiner has expanded upon the "good channel modulation sensitivity" rationale for the proposed combination of Chiang and Litwin at pages 12 and 13 in the responsive arguments portion of the Answer. We find the Examiner's comments, however, to be totally devoid of any evidentiary support on the record. It does not matter how strong the Examiner's convictions are that the claimed invention would have been obvious, or whether we might have an intuitive belief that the claimed invention would have been obvious within the meaning of 35 U.S.C. § 103. Neither circumstance is a substitute for evidence lacking in the record before us.

It is well settled that "the Board cannot simply reach conclusions based on it own understanding or experience - or on its assessment of what would be basic knowledge or common sense. Rather, the Board must point to some concrete evidence in the record in support of these findings." In re Zurko, 258 F.3d 1379, 1386, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001). See also In re Lee, 277 F.3d 1338, 1344-45, 61 USPQ2d 1430, 1434-35 (Fed.

Cir. 2002), in which the court required evidence for the determination of unpatentability by clarifying that the principles of "common knowledge" and "common sense" may only be applied to analysis of evidence, rather than be a substitute for evidence. The court further expanded their reasoning on this topic in In re Thrift, 298 F. 3d 1357, 1363, 63 USPQ2d 2002, 2008 (Fed. Cir. 2002).

In view of the above discussion, since the Examiner has not established a prima facie case of obviousness, the 35 U.S.C. § 103(a) rejection of independent claim 32, as well as claims 33-40 dependent thereon, based on the combination of Chiang and Litwin, is not sustained.

In summary, we have not sustained the Examiner's rejection of any of the claims on appeal. Therefore, the decision of the Examiner rejecting claims 32-40 under 35 U.S.C. § 103(a) is reversed.

REVERSED

JOSEPH F. RUGGIERO
Administrative Patent Judge)
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HOWARD B. BLANKENSHIP) BOARD OF PATENT
Administrative Patent Judge) APPEALS AND
) INTERFERENCES
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